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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,576	04/22/2004	Hiroshi Nishizawa	128508-1	6727
7590	02/02/2006			EXAMINER
Hamre, Schumann, Mueller & Larson P.C P.O Box 2902-0902 Minneapolis, MN 55402				YAM, STEPHEN K
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/829,576	NISHIZAWA, HIROSHI
	Examiner Stephen Yam	Art Unit 2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 November 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-6 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1205.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

This action is in response to Amendments and remarks filed on November 16, 2005. Claims 1-6 are currently pending.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinomiya US Pre-grant Publication No. 2001/0055073.

Regarding Claim 1, Shinomiya teaches (see Fig. 13) an imaging apparatus comprising a three-dimensional circuit board (101, 104) transmitting virtually no visible light (since it is made of ceramics- see Paragraph 0002), the three-dimensional circuit board comprising a cylindrical barrel portion (104) and a bottom portion (101), a semiconductor imaging device (109) held by the three-dimensional circuit board (see Fig. 13), an optical system (106, 107) that is held by the barrel portion and directs light to the semiconductor imaging device (see Fig. 13), and a flexible printed circuit (201), disposed on the three-dimensional circuit board on a side opposite to the barrel portion (see Fig. 13), for sending a signal to and receiving a signal from the semiconductor imaging device (see Paragraph 0003). Shinomiya does not teach the embodiment of Fig. 13 with a region of the flexible printed circuit facing the semiconductor imaging device having sufficient shielding characteristics in a range sensitive to light reception by the semiconductor imaging

device. However, Shinomiya teaches in another embodiment, a region of the flexible printed circuit facing the semiconductor imaging device having sufficient shielding characteristics in a range sensitive to light reception by the semiconductor imaging device (see Paragraph 0055). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a region of the flexible printed circuit facing the semiconductor imaging device having sufficient shielding characteristics in a range sensitive to light reception by the semiconductor imaging device, as taught by Shinomiya, in the Fig. 13 embodiment of Shinomiya, to provide additional light absorption for improved image precision, as taught by Shinomiya (see Paragraph 0055).

Regarding Claim 2, Shinomiya teaches the semiconductor imaging device having a small thickness (see Fig. 13). Since the thickness *obtained by grinding the back surface* does not structurally limit the semiconductor imaging device as claimed in an apparatus, the limitations of making the device through "grinding the back surface" cannot be given patentable weight in an apparatus claim.

Regarding Claim 4, Shinomiya teaches a metal foil laminated on the region of the flexible printed circuit facing the semiconductor imaging device (since a flexible printed circuit inherently contains printed metal foil contacts laminated on the surface of the flexible printed circuit on the side facing attached electronic components for conveying the electrical signals from one component attached to the flexible printed circuit to another component).

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinomiya in view of Nakagishi et al. US 2001/0010562.

Regarding Claim 3, Shinomiya teaches the apparatus in Claim 1, according to the appropriate paragraph above. Shinomiya also teaches a filter (107). Shinomiya does not teach in the region of the flexible printed circuit facing the semiconductor imaging device, the shielding characteristics against light with a wavelength longer than a visible range is higher than that against light in the visible range. Nakagishi et al. teach (see Fig. 1-5) a similar apparatus with a flexible printed circuit (3), with an infrared cutting filter (see Paragraph 0003) above a semiconductor imaging device, such that in the region of the flexible printed circuit facing the semiconductor imaging device, the shielding characteristics against light with a wavelength longer than a visible range is higher than that against light in the visible range (since infrared light, which has a wavelength longer than a visible range, is blocked by the infrared cutting filter). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an infrared cutting filter as taught by Nakagishi et al. as the filter in the apparatus of Shinomiya, to improve image clarity by filtering out light outside the desired imaging wavelength range.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinomiya in view of Gillette et al. US Patent No. 5,742,484.

Regarding Claims 5 and 6, Shinomiya teaches the apparatus in Claim 4, according to the appropriate paragraph above. Shinomiya does not teach the metal foil containing aluminum or silver/nickel as a main component. Gillette et al. teach a similar flexible printed circuit board (10) with a metal foil (14) constructed of aluminum or nickel as a main component (see Col. 2, lines 30-36). It would have been obvious to one of ordinary skill in the art at the time the

invention was made for the metal foil to contain aluminum or silver/nickel as a main component, as taught by Gillette et al., in the apparatus of Shinomiya, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (571)272-2449. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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THANH X. LUU  
PATENT EXAMINER